ped; inner ones 15-20 up to 1 cm long, narrowly lanceolate, margins membranous, glabrous, acute, persistent, recurving after dehiscence. Flowers homogamous, ligules 0. Disc-florets hermaphrodite with 3-5 fid corolla tube, anthers syngenesious and saggittate inside the corolla tube; style truncate protruding out of the corolla tube. Achenes up to 5 mm, linear, ribbed along the length, slightly hairy on the ribs; pappus white, longer than the achenes.

Specimen examined: RRL Campus, Srinagar, 30.4.1970—*Kaul* 140 (Herb. RRL, Srinagar).

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SAPOGENINS OF *SOLANUM SEAFORTHIANUM* ANDR.

Solanum seaforthianum Andr. is a woody climber. It is cultivated as an ornamental plant, for its beautiful bluish-purple flowers, in the temperate regions of the country. Earlier workers (Manske, 1968) have reported presence of alkaloids in different parts of this plant. The present work revealed the presence of tigogenin and gitogenin in the fruits and traces of tigogenin in the leaves.

The well defatted fruits (340 gm.) were extracted exhaustively with alcohol and the alcoholic extract was concentrated and divided into ether soluble and ether-insoluble fractions. The ether-insoluble material was hydrolysed with 5% alcoholic hydrochloric acid and the solid obtained on removal of alcohol was freed from the acid and chromatographed over neutral alumina. Two crystalline fractions were obtained from the eluates.

Fraction I (2.8 gm), was obtained from benzene : petrolether (1 : 1) eluates and was crystallised from acetone in white micro-needles, $C_{27}H_{44}O_3$ m.p. 210°C, $[\alpha]_D$ -70° ($CHCl_3$); acetate, m.p. 210°–211°C, $[\alpha]_D$ -80° ($CHCl_3$). On oxidation fraction I afforded a crystalline ketone, $C_{27}H_{42}O_3$ m.p. 211°C. This ketone showed positive Zimmermann colouration for 3-keto group. These properties of the compound and its derivatives are in good agreement with those of tigogenin and its derivatives suggesting their identity. It was substantiated by mixed m.p. and identical I. R. spectra with an authentic sample of tigogenin.

Fraction II (2.2 gm), was obtained from benzene eluent and was crystallised from acetone in white micro-needles, $C_{27}H_{44}O_4$, m.p. 262°-263°C, $[\alpha]_D$ -78.5 ($CHCl_3$); acetate m.p. 240°C, $[\alpha]_D$ -108° ($CHCl_3$). On oxidation fraction II gave an acid $C_{27}H_{42}O_6$, m.p. 246°C; this acid on methylation gave a methyl ester m.p. 132°-133°C. The above properties agree well with those reported for gitogenin and its derivatives. The identity was established by mixed m.p. and identical I. R. spectra with an authentic sample of gitogenin.

Similarly from the leaves negligible amount of tigogenin was isolated.

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ENSETE GLAUCUM (ROXB.) E. E. CHEESM.—A RELICT SPECIES IN THE EASTERN GHATS

The genus *Ensete* Horan. contains six species in Africa and Asia of which only two are found in India *viz. Ensete superbum* (Roxb.) E. E. Cheesm. and *Ensete glaucum* (Roxb.) E. E. Cheesm. The former is found wild in Western ghats and sometimes in cultivation in gardens. *Ensete glaucum* (Roxb.) Cheesm. is reported to be "thinly distributed from north-eastern India, Burma and Thailand, through southern China to the Philippines, New Guinea and Java." (Simmonds, 1962).

The authors collected *Ensete glaucum* (Roxb.) E. E. Cheesm. from the Eastern ghats, in Andhra Pradesh. These plants are seen in isolated localities on well exposed rocky slopes of mountains with some undergrowth. Since the species of *Ensete* Horan. are regarded as relicts (Simmonds, 1962), the collection of *Ensete glaucum* (Roxb.) E. E. Cheesm. from Eastern ghats of Peninsular India is highly interesting.

Since the genus is poorly known (Simmonds, 1962) a detailed description of the species together with its synonymy is given here from our observations in the field and from preserved specimens.

Ensete glaucum (Roxb.) E. E. Cheesm. Kew Bull. 1947: 101. 1947. *E. calospermum* (F. v. Muell.) E. E. Cheesm. *l.c.* 102. *E. wilsoni* (Tutcher) E. E. Cheesm. *l.c.* 103. *Musa glauca* Roxb. (Hort. Beng. 19. 1814, *nomen*) Corom. Pl. t. 300. 1820; Fl. Ind. 2: 490. 1824; Baker in Hook. f. Fl. Brit. Ind. 6: 262. 1892; Schumann in Pflanzenr. IV-45: 21. 1900; Backer, Fl. Java 3: 36. 1968. *M. calosperma* F. v. Muell. Proc. Linn. Soc. N. S. Wales 10: 355. 1885 et in Gard. Chron. ser. 3, 20: 360. 1869. *M. wilsoni* Tutcher, Gard. Chron. 2: 450. 1902.

A monocarpic unbranched nonstoloniferous plant, 3-3.5 m high; *pseudostem* white-pruinose, swollen at the base, 20-22 cm diam. at breast height, juice watery turning quickly, pale rusty brown on exposure. Sheaths, petioles and bracts waxy. Juvenile leaf green, petiole green. Adult leaves 1-1.5 × 0.35-0.4 m ascending, oblong-lanceolate, acute, base unequal, green above, glaucous beneath, midrib yellowish green; petiole 30-35 cm green, light pink near the stem on the inner surface, deep and narrow channeled in young leaves, shallow and broad channeled in adult leaves, black and entire at margins. *Inflorescence* pendulus, cylindrical when fresh; peduncle glabrous, *ca* 35 cm long; bracts 22-24 × 16-18 cm, green, glaucous, broadly ovate, acute, rather thin, several opening at a time, never deflexed, persistent, integral with flowers and axis; basal flowers fertile, hermaphrodite, gradually transforming to staminate flowers towards the apex through hermaphrodite and neuter flowers in the middle. Male bud ovate to lanceolate, acute, component bracts compact. *Flowers* white or